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MANAGEMENT EDUCATION:
AN EXPERIMENTAL COURSE

Paul Payne Gutelius

NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

MANAGEMENT EDUCATION:

AN EXPERIMENTAL COURSE

by

Paul Payne Gutelius

Thesis Advisor: J. A. Jolly

March 1974

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Approved for public release; distribution unlimited.

Management Education:

An Experimental Course

by

Paul Payne Gutelius
Lieutenant, United States Navy
B.A., Northwestern University, 1969

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN COMPUTER SYSTEMS MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
March 1974

ABSTRACT

This thesis describes the design, implementation, and evaluation of a course in the theory and practice of management. It gives an appraisal of programmed learning techniques and compares three methods of teaching management -- by readings, by cases, and by computer gaming. Additionally, it relates student reactions to the opportunity to select one of the three methods.

The conclusions emphasize the need for an integrated, dynamic approach to management education. Programmed learning must be supplemented by class lectures and discussions when the theory is being taught. The students need exposure to all three options in the practice phase of the course. Most importantly, the value of a choice between options is seen. The motivation and interest generated thereby surpasses all expectations. An improved course outline which includes all of the conclusions is also presented.

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I. INTRODUCTION

This thesis describes the design, implementation, and evaluation of an experimental course in the theory and practice of management. The course was designed to appraise the programmed learning method of instruction in teaching the theory of management and to compare three alternative methods of teaching the practice of management -- by readings, by cases, and by computer gaming. The course also set out to demonstrate that allowing students to select one of these methods for practicing management increases their interest in and motivation toward the course, thus making the course more beneficial to them.

The thesis here presented resulted from personal experience in taking the required course, Theory and Practice of Management, MN 3105, at the Naval Postgraduate School. The idea originated after a class discussion which indicated that management educators have been evaluating different teaching techniques and that nearly every meeting of management associations in recent years has dealt in part with the relevance of management education. Some schools and professors make "extensive use of lectures, collateral readings, textual notes, library research projects, field research projects, . . ., business games, and the like." [Towl, 1969, p. x.] Other

professors incline toward the use of one method. There has also been discussion of the general validity of management education, such as J. S. Livingston's "The Myth of the Well-Educated Manager."

Expatiating on methodology and on the value of education at management association meetings has been useful to the extent that management educators have been encouraged to be alert and flexible in their approach so that management education is as exciting and challenging as management is. It was the class discussion at one such meeting at which programmed learning techniques were explained, that stimulated interest in the subject of management education.

Programmed learning was originally to be used as the primary method of instruction for the course, allowing the students to progress at their own speed and to complete the course at any time within the term. Problems arose in formulating and evaluating a course using this method and the three previously mentioned options, and several changes were required. As indicated in section II.A. of this thesis, programmed learning was the primary method of instruction during the theory portion of the course, while the options were used for practical application of the theory.

A. EXPECTATIONS

It was not expected that one of the three options would prove vastly superior to any other, because each option teaches different

things in different ways. Readings exposed the student to the thoughts of well-known authors in management. The student was required to evaluate each author's beliefs in the light of his own concepts, to accept or reject the author's beliefs, and to assimilate the new ideas he accepted into his own management philosophy. The students who selected this option were expected to be those who enjoyed reading, who expressed themselves best in writing, and who were less willing to speak up in the classroom.

The students who selected the cases, on the other hand, were expected to be those who spoke freely in class, and who felt more inclined to problem-solving than to theory-reading. These students were to look at a variety of problems from many industries in different environments on a one-time basis.

The computer gaming option, alternatively, presented recurring decisions in the same industry in nearly the same simulated environment. It was expected that students expert in the use of the computer and those looking for the "easiest"method of getting through the course would elect this option.

B. VIEWS OF THE OPTIONS

The options selected for this course were the ones most frequently discussed in literature on management education. Readings, for instance, bring "together concepts, attitudes, experiences, and

viewpoints of some of the modern educators and professional managers." [Shull, 1958, p. x.] The frequency of the utilization of readings in courses on management is shown by the many authors of textbooks on management who also edit a companion text of readings.* Authors try to select "articles dealing with the most important aspects of management." [Dale, 1970, p. vii.] Hicks designed his book of readings "to serve as a text in courses in management and organizations . . . as a supplement in courses with regular texts or alone in case-oriented courses . . . as the main text in seminars, discussion groups, and managerial development programs . . ." and as an important part of an independent study program. [Hicks, 1972, p. xi.] He attempted to include articles that "best expressed the issues involved in each topic. [Ibid.] He selected articles from many disciplines to discuss his topics, while other authors designed their topics to illustrate the various disciplines or schools into which writings are organized -- the Classical School, the Behavioral School, and the Management Science School. [Donnelly and others, 1971, p. v.]

Readings support textbooks which often do no more than "refer to some of the more significant literature of management. The tendency

---

*A few examples of this are found in the writings of Ernest Dale; Donnelly, Gibson, and Ivancevich; Hicks; Koontz and O'Donnell; and Terry. Their books of readings are listed in the Bibliography. The Terry and Donnelly and other books have cross-reference tables to facilitate their use with several different textbooks.

for such books to be rather narrow in approach and to deal summarily, rather than broadly with the subject matter is unavoidable." [Koontz and O'Donnell, 1959, p. v.] Readings attempt to bring together from various sources, material that is appropriate for the class, "giving useful explanations of concepts, examples of practical applications, and new thoughts and techniques of management." [Terry, 1973, p. v.]

While readings usually present concepts and discuss them, cases are used to discuss problems which use various concepts, and thus to discover the interrelationships of such concepts in their practical applications. A case, according to one author, is "the facts in a concrete situation creating an issue requiring discretionary action. Such a case provides a body of data relevant . . . to the student developing orientation to administrative responsibility, knowledge, skill and maturity." [Towl, 1969, p. 5.] Cases provide "learning experiences that will help the learner to develop these skills: analysis, clear reasoning, use of imagination, and good judgment." [Zoll, 1969, p. 29.]

> As a means of conveying knowledge the case method is disorderly and appears unstructured. Ideas come to the student from the data of case facts and from the discussion of them, as students and case leader all argue among themselves and challenge and support and explore each other's ideas of the pertinence of particular facts, the influence of particular considerations, the contribution of new data derived from the presented material after analysis or calculation, and the importance of various factors. The ideas come as a child learns -- by experience, in whatever order events occur. [Merry, 1967, p. 3.]

This paragraph imples the professor's place in such a course: (1) to allow the students to explore the case and only to enter the discussion to clarify student ideas or to summarize the discussion, and (2) to provide the underlying structure for the course by the proper selection and sequencing of the cases. The case provides the student with many "analytical and decision-making experiences concerned with a multitude of different problems faced by different types of management teams under differing conditions and in different industries." [Towl, 1969, p. xi.]

Business games, by contrast, afford "experience to students working with other students in a common organization in a situation usually requring repetitive analysis and decisions over periods of time." [Ibid.] The groups or teams must live with the decisions made in previous periods. They are concerned with the ongoing enterprise whereas case students are not. It is experience rather than intellectualizing that the student gets from a game.

Games force the participants

> to deal simultaneously with all of the factors in the situation -- production, marketing, finance, competition, inflation, etc. Practice in dealing with these problems obviously does not guarantee that the participant will become an expert manager, but he almost certainly will develop insight and appreciation for the importance of considering the overall company situation when making what may have previously seemed to him to have been largely isolated decisions . . . [Henshaw, 1972, p. v.]

The value of this practical experience is shown by the fact that "in many institutions of higher learning, business games have come to play an important part of the training of future business leaders." [Dale and Klasson, 1964, p. xi.] A survey showed that "of 90 leading collegiate schools of business responding . . ., 64 reported that business games were being used in 1962, 6 were planning to introduce gaming in 1963, and 12 indicated that they would like to use games, if resources permitted. Only 8 of the 90 responding colleges were unconvinced of the value of gaming." [Ibid, p. 6.] This survey will soon be conducted again by a student from the Naval Postgraduate School as part of a thesis. It is expected to show that an even larger percentage of those who respond will be using games in one or more courses.

Each of these three methods appealed to some students more than to others. Some enjoy reading many points of view. Some prefer to do cases either in a classroom environment or in the business world. Still others would select the option for quantitative decision-making provided by a computer game. Allow them to choose and their enjoyment of the course will increase.

The contention that students enjoy a course best when they have some voice in the method employed to teach the subject is neither revolutionary nor new. It is a simple recognition of the facts "that there are a thousand million different human wills, opinions, ambitions,

tastes, and loves; that each person has a different history, constitution, culture, character, from all the rest; that human life is the work, the play, the ceaseless action and reaction upon each other of these different atoms." [Eddy, 1896, p. 224.] This course was designed to acknowledge these differences, to use the differences as an aid to learning, and to evaluate the motivation generated thereby.

II. DESIGN

A. DEVELOPMENT OF TEACHING PLAN

The original course plan was to use the three options, with all the students examining the same topics, but using different media. The topics to be covered were planning, organizing, staffing-motivating, directing, and controlling. The first week of this design was to be used for introduction, orientation, and option selection. The rest of the course was to be divided into two week segments for each of these functions of management. Readings and cases on each of the topics were relatively easy to find, but all the games located were oriented toward decision-making and not toward the individual functions. Students would have to apply the various functions but they would learn neither the evolution, the development, nor the academic justification of them.

This deficiency in the gaming option raised questions regarding the validity of using options. How could all five topics be covered by all three options if appropriate material was not available? Several weeks were spent wondering how to handle this challenge.

The solution was simple, logical, and had been overlooked when the thesis was begun. Several authors emphasized the need to integrate the various methods into a total program. [See for instance:

Towl, 1969, p. x; Cohen and others, 1964, pp. 77-79; and OECD, 1972, p. 66.] The course naturally divided into two distinct parts: the theory and the practice. The solution as indicated in the Introduction, was to teach the theory first, using programmed learning techniques; and then to practice the theory using the three options.

The course outline in Appendix A describes the final course organization: the first three weeks were devoted to readings on the theory of management; the next approximately six weeks were spent practicing management in one of the three options; the last two weeks of the course were used for a combination case-manual game during which the students participated in the manufacturing process from the planning to the production of a prototype vehicle.

B. TEXTBOOK SELECTION

Textbook selection was important because the books would be used for a brief period of time at the beginning of the quarter. They had to be interesting and informative. They had to cover the details and principles associated with the functions of management. To accomplish this instruction in the most efficient and least painful way for the students, a concise and precise programmed learning text by George R. Terry was selected: Self-Review of the Principles of Management. This book presented each of the desired areas. It was the only comprehensive programmed learning text on management principles that was found.

The other textbook selected was Douglas McGregor's The Human Side of Enterprise. It was chosen because it was easy to read, stimulating, enjoyable, and because it appeared first on a list of texts recommended by management professors in December, 1972. [Matteson, 1973, p. 1.]

III. IMPLEMENTATION

A. INITIAL READING LIST

The initial reading list dealt with the theory of management. The readings are listed in Appendix A. The articles by Koontz ("The Management Theory Jungle") and Livingston ("The Myth of the Well-Educated Manager") were considered to be among the most important articles for management students to read according to a recent study. [Matteson, 1973, p. 5-8.] Sloan's My Years at General Motors was chosen because he offers some intimate views of GM, its problems, and its decision processes. The sections read in Sloan dealt specifically with the principles of management used by that corporation. It provided the students with the views of a practitioner.

Another and probably better known practitioner whose book the students read was Robert Townsend. His enjoyable book, Up the Organization, provided a refreshing and successful alternative that many managers can employ.

B. MIDTERM

The midterm (See Appendix B) was designed to ensure that the reading required for the first three weeks of the quarter was completed. Half of the test consisted of short answer questions from the examinations in the back of the Terry text. The other portion of the test, an

essay, required the students to evaluate a statement in the light of and with illustrations from the reading assignments. The essay gave the student an opportunity to show that he had mastered the principles of management, in particular the five functions.

There were some problems. Some of the questions from Terry were ambiguous and two had to be removed from the scoring. Only one student included the words associated with the functions of management in the essay. Some did not use illustrations from two of the authors as was required. Basically, many students had trouble following the directions provided on the test.

The grading of the test was thus made more difficult. The essay section was graded using the criteria originally planned, but it was modified so that partial credit could be granted. Some credit was given for ideas which indicated a knowledge of the functions of management, even if the functions were not explicitly stated. The students varied considerably from what was expected and some of the performances were disappointing. The test demonstrated that the theory was not as clear as it should have been after three weeks of reading. One cause of this was the reading period with no lectures, although the instructor was available four days a week to answer questions. The functions were restated and discussed several times as the course progressed after the midterm.

The breakdown of grades on this examination was as shown in Table I. This appeared to be a reasonable distribution and the grades

Table I

Grade	Number of Students
100	1
85-95	6
80-84	5
75-79	5
70-74	6
60-69	1

were not put on a normalized curve. Most of the students were satisfied with their grades, or at least did not complain about them. In the questionnaire at the end of the course, most students indicated that the midterm was the weakest part of the course.

It was evident from the problems encountered that a great deal of precision is required in constructing an essay question. (The development of the essay question used is detailed in Appendix B.) The question must specifically tell the students what is expected of them in such a way that misinterpretation is difficult. Multiple choice and short answer questions must also be designed or selected carefully, as they too were subject to interpretation. Many students assumed things that were not intended, but those who did and wrote down their assumptions, received credit for the answer if their assumption would have produced that result.

One other fact learned from the midterm was that some students are never satisfied with their grade. One student insisted that his essay be regraded since he felt that he knew the material. It became apparent while rereading the essay that the original grade was generous. This was noted on the paper when it was returned but arrangements were made to have an impartial third party available to read the paper if the student desired. The third person was used, but he could find nothing to justify raising the grade. It was important to learn how some students try to intimidate instructors, especially new ones.

C. FINAL EXAMINATION

The final examination made use of the experience gained from the midterm. The exam was a case study based on actual experience. Questions were included at the end of the case to indicate the desired focus for the examination. A copy of the case is found in Appendix C.

The final examination written by the students contrasted favorably with the midterm results. The students displayed a generally excellent knowledge of the functions of management. Table II shows the grade breakdown for the examination by option.

D. OPTION SELECTION

During the third week of the course, each student selected an option to follow for the next approximately six weeks. Appendix D is a copy of the option selection form. Selection was a management

Table II

Grades	Options: Readings	Cases	Game	Totals
A	0	2	2	4
A-	0	1	2	3
B+	1	1	0	2
B	0	0	1	1
Totals	1	4	5	10*

decision process. An alternative had to be selected without absolute assurance as to the outcome, although the uncertainty was reduced through questioning. Each alternative had been designed to be equal in the work required.

Reasons for selecting options varied. Some students chose an option because they had studied using that method before. Some preferred to analyze in writing and they selected the reading option. One chose readings in order to continue his undergraduate study of sociology by researching the human behavior aspects of management. Another student wrote about his selection of readings:

> . . . Considerable time was spent evaluating the options. I finally chose this option because I thought I could gain a better background and basic foundation in management . . . I feel that I chose the option that maximized my education in the field, and I am satisfied that my objectives in this course have been met.

*Three students doing the readings chose to write a final paper in lieu of taking the exam; five students wrote papers evaluating management principles used in local businesses; four students elected to take a B for the course rather than write a final exam.

Cases were selected by those who wanted to practice for the final exam. Others chose cases because they could branch into work with a local business for a "live" case. One student indicated that it would be "refreshing and challenging to entertain an analysis of a competitive business." Others indicated that the local business method would foster faster learning and greater depth, would provide learning by experience, would develop abilities in oral communications, and would mature views of the mechanisms of business. Interaction among participants brought some students to select cases and others to choose the computer game.

The game also drew those who wanted to test managerial and financial accounting, to improve their decision-making ability, to become personally involved, and to avoid extensive reading.

Student time actually devoted to an option ranged from 50 to 75 percent of the quarter, as shown in Table III.

Table III

Readings	50%
Cases	50 for students doing only in-class cases 75 for students working with companies.
Computer Game	60

E. THE OPTIONS

1. Readings

The readings selected are listed in Appendix E. Each two-week period was centered on a "school" of management. The Matteson survey referred to earlier was used extensively to develop these reading lists.

The first set of readings was on the classicists. The list provided the students with a selection of the earliest writers on management from which they selected one book. They also were required to read several articles by and about the classicists. The authors selected were those considered to be the best in the "school".

The second set of readings dealt with the behaviorists. This list was the longest because there was a vast amount of literature that covered the social sciences, particularly psychology and sociology. The list was divided into required and optional sections, in order to expose the students to the wealth of writing on management done by this school, but to allow the students time to work in other courses. They received the list and if they had an opportunity to read even a few of the optional works, the effort was worthwhile.

The third set of readings had two focuses. As first conceived, this set was to deal with operations research and management science. It was decided to drop this approach since the students would all have a course on operations research in their next quarter. The students

were directed instead to read a section of one textbook from a list provided on the subject of management science. This would provide the student with an understanding of the place of management science theories in the overall picture of management education without overwhelming them with the specifics of the science. The students were then to choose one of three books on the "lighter side" of management education. These books were primarily written tongue-in-cheek by managers tired of books on management. They pointed out views of management and of its problems that most textbooks ignore. These books forced the student to rethink some of the doctrine found in textbooks to decide if the theory and the practice coincide. In many cases they did, but the purpose of the exercise was to force the student to verify the coincidence on his own.

In addition to the reading, each student was required to submit a brief paper on his reading for each two-week period. These papers covered the books and articles read, giving a brief summary, then expounding on the interrelationships of those readings with other books and authors read and with the student's own feelings about management. The last set of papers was the best because they had read many authors and because the students were directed to write based primarily on their own beliefs and not only on the reading. They were challenged to do some original thought, to which they responded very well.

2. Cases

The case option was started with simple cases, each one dealing with one or two functions of management which were selected from the list: planning, organizing, staffing-motivating, directing, and controlling. The rest of the cases were chosen for their presentation of varied aspects of management ranging from project management to human relations problems. Some dealt with the above functions and others did not, but most focused on challenges the students would face after graduation. The students were to look deeply into each case to see if the organization could have used management theory to avoid or to correct their problems. The cases are listed in Appendix F.

After the first five cases, five of the case students chose to work in the local business community using a "live" case. Two companies had agreed to let a small group of students study their companies to learn if and how management principles were being applied. The reports submitted by the students revealed some areas where improvements could be made. Both companies expressed their satisfaction with the results obtained from the studies.

3. Computer Game

The game selected for use in the course was the Executive Game. [Henshaw, 1972.] It appeared to be the best of the games presently on the Naval Postgraduate School computer. Other games which were not on the computer did not add significantly to the possibilities of gaming already available. The Executive Game covered

the following concepts: the decision-making process, the interrelationship between functional areas of the firm, the importance of gathering complete and accurate information, financial analysis, and proper planning. As the game was played the students gained an appreciation of the forces operating in an oligopolistic industry, a feel for long-range planning, a better understanding of financial analysis in a dynamic system, a sense of the teamwork required in business, and a taste of executive decision-making under uncertainty. [Abel and others, 1973, p. 4.]

IV. EVALUATION

Feedback about the course was obtained several times during the quarter. Some students spoke up in class; some mentioned confusing areas in private; others wrote notes; some were solicited for comments on the reading lists in the last paper.

The best source of feedback, however, was a questionnaire passed out the last day of class to all the students, a copy of which is in Appendix G. This questionnaire provided a comprehensive view of the students' reactions. Space for comments was left in three places on the form but comments were optional. Of the 21 questionnaires returned, 14 made comments in one or more places where they were invited; 12 made comments in more than one area. Only one student indicated that he disliked his option and 74 percent would take the course over again in the same option, if they had the time. A lesser percentage, 72, indicated that they would be willing to take the course in another option.

The availability of options was the best liked part of the course: 57 percent of the students agreed completely and the rest divided between agreeing and agreeing only slightly. Supporting this was the unanimity of students who would have friends take the course, although not necessarily in the same option. Some students felt that a

combination of options would be more beneficial, using two or all three of the options.

The students who appeared to be least satisfied with the course were those who chose the game option. They had virtually no formal guidance from the instructor and no attendance requirement. The instructor was available to help them four days a week at a time when they were all free, but few took advantage of this availability. In a critique session held after the last iteration of the game, several students indicated their desire to have some class time to cover more theory and to provide greater instructor-student contact. They suggested cases be used for this study since that was how the final examination was to be constructed. The students felt that they gained a comprehensive understanding of the workings of the game by the end of the third or fourth iteration, and that they no longer required more than about two hours for each iteration of the game.

This suggestion was among the most valuable that were received. The game did not present enough new material on management, although it did force the students to use material from several other courses. The game must be mixed with readings or cases, so that the challenge of the game is put into the perspective of management education. Alone the game is insufficient, although most of the students indicated that the game was useful as a teaching method.

A summary of the results of the questionnaire is in Appendix G.

The second best source of comments on the course was the third set of papers in which the students in the reading option were required to comment on the value of the course to them. Three of the four students granted permission to quote from their papers. The first wrote:

> One thing this course has permitted that 98% of the other courses I have encountered here do not; it allows the student the opportunity to choose one method out of three offered to learn the same principles. I personally have felt more motivated because I had a choice as to which method of study I would undertake. I like to accept responsibility and I felt the objectives of the course were well defined in the beginning and that Terry's Principles of Management . . . built a tremendous foundation of the principles of management that everyone could understand and begin with. From that text I felt I could branch out to any particular area of study and continuously refer to the introductory principles and apply them where necessary.

Another wrote:

> The unique characteristic of this course is that in being able to select from various options to fulfill the requirements, the student has been given the opportunity to adapt the course work to fit his individual needs and interests. Pursuing these options has provided an opportunity for the students to develop the art as well as the science of management.

The third stated:

> I have received a more comprehensive education in management theory and practice than I could have in a strict classroom atmosphere . . . I was highly motivated to learn. I wanted to increase my knowledge in this particular area, and I have indeed done that.
>
> My foundation in management has been greatly expanded through the reading and personal evaluation of the various authors in the field. This course has stimulated interest among my classmates, and I have benefited through my discussions with them.

> The most important contribution this course has given me is the indirect result of my studies. As a result of the knowledge I have ingested, I have developed a much higher level of confidence in myself as a manager. Now with an adequate base of formal knowledge of the field coupled with my past experience, I feel that I can more effectively perform in the role of a manager.

These comments show the success that was achieved by permitting the students to choose an option. The option selection motivated the students, but the instructor's workload is heavier than in a lecture class because he is running three concurrent courses. The instructor must be willing to give the time required in order for the course to be successful. Lectures are a simple, but not involving, way to teach management. The option method forces the student into an active role as a participant, rather than as a passive spectator being spoon-fed. Active participation develops, encourages, and maintains student motivation, interest, and performance. The results of the extra effort by instructor and student showed in the grades for papers, for examinations, and for the course. All the students were doing at least B+ work, and all could have achieved that as a final grade. Four students, however, chose to accept a B for the course rather than to take the final examination. Giving the students that choice was a mistake that should not be repeated.

The final grades for the course are shown by option in Table IV.

Table IV

Grade	Option: Readings	Cases	Game	Totals
A	2	3	1	6
A-	1	5	3	9
B+	1	1	1	3
B	0	0	4	4
Totals	4	9	9	22

The small sample size precluded meaningful statistical analysis, especially when the four B's were eliminated, since the course work to the final indicated that each of the students would have done better if he had taken the final examination.

The inability to develop significant statistical information does not, however, invalidate a straight comparison of the final grades, tempered by a knowledge of the student reaction to the course. The game option, as previously stated, was the weakest. The students in that option who did not attempt to develop a feel for management by supplemental reading, by discussion, or by attending case sessions undoubtedly left the course with little new knowledge of management functions and principles. Those individuals were probably the ones who chose not to take the final examination and who felt that the game was the easiest way to "get by." The students in the game option who did extra work gained the most from the game. The highest grade for the course came from a student in the gaming option.

The other two options were generally more successful, although the students in readings learned in a different way than those doing cases. The readings people developed a firm grasp on the various facets of management and on written communication, whereas the case group developed experience in interpersonal oral communication and in handling problems. As the students interact in the rest of their graduate studies, they will share the knowledge that they obtained from this course. This is especially true since all but two of the students were members of the same academic section.

V. CONCLUSIONS

This section of the thesis presents an evaluation of the programmed learning method as used in this course, some comments on the three options employed, and a recommended course outline which combines the best of what was done in this thesis along with student comments.

The midterm examination demonstrated that the programmed learning text used in the course did not adequately emphasize the important functions of management. The concepts were all presented, but the text should have been supplemented with some class meetings in order to put the reading into perspective and to state those areas that are most important in the theory.

No one method of teaching presents all the important aspects of management, but each covers some. Thus the options complement one another. The ultimate need is to expose the student to all of the options. As the programmed learning needs to be strengthened by class discussion, so the options need to be reinforced by exposure to each other.

The question is how to do that, in the light of the high motivation toward and interest in the course generated by allowing the students to select one option. This was indicated by the student papers quoted

earlier and was echoed in comments on the questionnaire: "I am convinced that my intake of usable knowledge was increased by at least 50% as a result of choice of learning method." and " . . . this was the first course in my . . . NPS (Naval Postgraduate School) experience where I felt that I was really participating by invitation of the instructor."

The solution to this dilemma includes both the selection of and the exposure to all the options. A recommended course outline that would permit this would assign the first three weeks of a quarter for an initial reading list and discussions of the material in class. The addition of class time during this theory-oriented segment of the course would provide the instructor with time to emphasize important points in the readings and to discuss them with the students. The next six weeks of the quarter would be devoted to the practice of management by means of one selected option. Those who selected the game would be required to participate in case discussions or to read selected material for the last two weeks of this segment of the term. The final two weeks of the term would be devoted to an exchange of knowledge, by means of oral presentations by, and discussions of, the various options. The exchange of information would provide the students with an opportunity to learn something from each of the options. Each student would share his enthusiasm for his option with the rest of the class, thus using active participation as an additional tool in the course.

This course was designed for graduate students in a Computer Systems Management curriculum. All of the students had been managers during their careers in the Navy. They brought their experience to the classroom and more importantly shared that knowledge. Any course must reach the students at their level and help them to help themselves. The recommended course outline presented above might not work in an undergraduate program or for a different curriculum. The instructor must be alert enough to the needs of the students and be flexible enough in his approach to management education to reach the class, to raise their esteem for the value of tools of management, and to motivate them to learn on their own. After all, management and management education are inextricably joined, and what progressive company or organization would allow a manager to be anything other than alert to the needs of his people and to the goals of the company and flexible in his approach to problems? Why should we ask less than that of our educators?

APPENDIX A

COURSE OUTLINE

This is an experimental approach to the teaching of the theory and practice of management. The novelty occurs during the last portion of the course during which you select a means to an end.

Tentative outline

Week	Date(s)	
1	24 Sep	Introduction and paperwork
	26	No class; reading list--theory
2	1 Oct	No class; reading list--theory
	3	No class; reading list--theory
3	8	Class meeting and seminar with Mr. P. B. Warner
	10	Choose study method; finish reading list--theory
4	15	Midterm on theory
	17	Begin work individually and in groups to practice the elements of management

Options weeks 4 - 9

Students will meet with the instructor during the third week, either individually or as a class to choose from the options listed below. Each method is designed to be equally difficult (easy).

1. Selected Reading. Students will be provided a reading list from which to select articles and books. Class attendance is optional. A typed report on the reading, not to exceed 4 pages and worth about 16% of the final grade is due every two weeks. Option of final exam or paper (topic to be approved).

OR

2. Case Study.

a. Students will be required to prepare two cases per week for oral discussion during the regular class session. All students will study the same cases. Three copies of each case is on reserve at the library. You will also individually complete interactive cases. 50% of the final grade will be based on the discussion.

b. Same as above for weeks 4-6. Weeks seven to eleven will be spent on a live case -- analyzing the implementation of the principles of management in a local business. This section will have no final but will be required to write a comprehensive report (in duplicate) on the firm, indicating proper uses of management principles as well as specific areas for improvement.

OR

3. Computer Game. You will play two practice quarters and about 10 quarters of the Executive Game, model 2, which is on the IBM 360. Teams will consist of 3 players with a possible nine team configuration. Decisions are made quarterly and all decision sheets will be annotated to indicate the reasoning used to arrive at the decisions indicated. A legible copy of annotations will be turned in to the game supervisor along with properly punched decision cards. Class attendance is optional. 25% of final grade is based on success in business; 25% on annotations indicating specific uses of management principles.

OR

4. Open. If you have some way to practice the principles of management, let's talk about it.

Weeks 10 and 11 (25 Nov - 5 Dec)

This is traditionally the busiest time of the quarter for students. Those who are not involved with the live case program will conduct a manual game which will test your skill in the application of the principles of management. This game is tentatively scheduled and is somewhat dependent on the availability of funds.

Exams

Midterm	15 October
Final	11 December

Reading List--Theory

Koontz, Harold, "The Management Theory Jungle," Academy of Management Journal. Dec. 1961 pp. 174-178. The same article is found in Donnelly, Gibson and Ivancevich, Fundamentals of Management - Selected Readings; and in the Harvard Business Review under the title "Making Sense of Management," July-August 1962.

Livingston, J. Sterling, "Myth of the Well-Educated Manager," Harvard Business Review, Jan-Feb 1971, pp. 79-89.

McGregor, Douglas, The Human Side of Enterprise -- Text

Sloan, Alfred P., My Years at General Motors (Garden City, New York: Doubleday and Company, Inc., 1964) Chapters 1 and 2; pp. 100-102; and chapter 23.

Terry, George R., Self-Review in the Principles of Management -- Text; all except chapter 5.

Townsend, Robert, Up the Organization - How to stop the corporation from stifling people and strangling profits. (New York: Alfred Knopf, Inc., 1970). Also available in paperback. If you don't already own this you should buy it.

APPENDIX B

MIDTERM

PART I

name_____

DIRECTIONS: Count the number of pages you received as part of this exam. Print your name at the top of each page. Write your answer in the space provided. Two points for each question.

1. Match the approaches to management thought shown in the left column with the proper descriptions shown in the right column.

_____	a. Human Behavior.	1. Uses mathematical models and processes quantifying variables and relationships resulting in decision or answer to problem.
_____	b. Systems.	2. Features inter- and intrapersonal relationships among employees and their affect on management.
_____	c. Quantitative.	3. Views the many activities as related and provides a framework and a means for identifying the critical variables and constraints important in a managerial situation.

2. Managerial controlling can be defined as _____

_____.

____3. Coordinating is considered by many to mean the same as managing, in that coordinating is performed to achieve a unified action toward a stated goal. (T or F)

____4. Usually, the most economical decision-making basis is experimentation.

____5. Group decision-making gives what some managers call patterned decisions.

6. Define dynamic planning: _____

_____.

____7. Too much or too little information can hinder planning, yet all information is useful to the planner.

____8. The chief informational needs required for effective planning are:

a. Objectives, personnel, and political.
b. Environmental, competitive, and of the individual enterprise.
c. Environmental, political, and price levels.
d. None of these.
e. All of these.

____9. Nonformal behavior within an organization is usually undesirable.

10. Define responsibility:_____

_____

___11. The use of motivation starts with the manager, not with motivating others.

___12. Participation has motivating effects, because it gives the individual

a. Interesting work to do.
b. Efficient leadership.
c. Accomplishment of useful work.
d. Adequate knowledge to contribute to progress.
e. All of the above.
f. None of the above.

13. The need for self-esteem and self-fulfillment represent

_____wants; those for clothing and shelter

_____ wants; those for status _____wants.

Choose one of the following for each blank:

a. Physiological.
b. Social.
c. Ego.

___14. Providing information needed for effective action by an employee is normally advocated for:

a. New employees only.
b. Long-tenured employees.
c. Employees below production standards.
d. None of the above.
e. All (a, b, c) of the above.

___15. To rescind an order is a mark of poor management.

___16. Orders requiring a subordinate to act in a certain manner in a given circumstance are employed by all managers.

___17. Communicating is a fundamental function of management.

___18. For the best management, controlling should be:

a. Profit-oriented.
b. Cost-oriented.
c. Objective-oriented.
d. Man-oriented.

___19. Leadership is best described as:

a. Creative and continuous.
b. Dynamic and continuous.
c. Decisive and dynamic.

20. What is empathy? _____

_____.

21. Controlling is _____

_____

_____.

___22. Included in the category of overall controls are:

a. Sales budgets, strategic points, and organization pattern.
b. Ratios, break-even analysis, and return on investment.
c. Authority, standards, and PERT.
d. None of the above.

___23. For superior management, controlling should be viewed as an isolated and independent activity.

___24. The role of the manager is narrowing.

MIDTERM ESSAY QUESTION DEVELOPMENT

The first question written was:

> Now that you have read McGregor, Sloan, Townsend, and the two articles, has your view toward management and management education changed? Explain your reasons.

This question was eliminated because it was impossible to grade.

The next attempt read:

> What is the difference between Theory X and Theory Y?

This question was too specific. Nothing from the readings except from McGregor would have appeared. That was unsatisfactory, but slightly better than the previous attempt. The next question began to focus on the ideas that were desired:

> "It is not important how a job gets done. The only measure is that it is done promptly and efficiently."

This was a good start but needed further development. The next step in the development read:

> "It is easier and better for my career if I do the parts of my subordinates' jobs that they are slow in completing." Do you agree or disagree with this statement? Why? Support your contention with examples and illustrations from McGregor, Sloan, Townsend, Koontz, and/or Livingston.

The final version appears on the next page. It incorporated the ideas above so that the question specified that the principles of management were required and also that knowledge of the authors was requisite.

MIDTERM

PART II

name_____

DIRECTIONS: This part of the exam is worth 50 points. It is essay in nature and you are expected to write only as much as is required to state your case.

"It is easier and it is better for my career if I do the parts of my subordinates' jobs that they are slow in completing."

Do you agree or disagree with this statement? Why? Support your contention with examples and illustrations from at least two of the authors you have read this quarter. Relate your answer to the principles of management. MANAGE your answer. Keep it clear, concise, and specific. Separate your comments on each of the principles by paragraphing.

APPENDIX C

FINAL EXAMINATION

THE JAMMER COMPANY [1]

"I just don't understand it. Why can't we get the theoretical yields we should from our production runs?"

George Stinson, vice president of western operations for the Jammer Company was talking to his EDP manager, Jim Kelly, in the San Francisco office of the company. Jammer makes jams and preserves in its San Francisco plant, and in several other plants in the U.S. The corporate offices are in Cleveland, Ohio, to which the SF office is linked via WATS and teleprocessing communications lines. The San Francisco office is installing a computer to take over the accounting functions of the firm's western operations, but recent physical counts of the raw material inventory have been very disturbing to Stinson. He is also concerned that the outputs from company production formulas have been inconsistent with the theoretical yields.

Kelly thought hard about Stinson's question before he answered, "Maybe we should think about computerizing the raw material inventory system. Then any miscalculations by Margaret (the inventory clerk) would be eliminated; but I don't think that is going to solve the problem of the yields."

That evening Kelly and a group of friends were going out for dinner. Bill Smith, a graduate student and former roommate of Kelly's, mentioned that he was taking a course on management information systems and that he was looking for a term project dealing with computers and management. Kelly's ears perked up.

"We are having trouble at the plant with our theoretical yields and our inventories. If you can come out next week, my boss and I may be able to find something for you to do."

Kelly explained to Stinson the next day that Smith was available at no cost and that they really had nothing to lose in the proposition. Stinson agreed and they set up a meeting with Smith for the next week.

Smith arrived promptly and was ushered into the conference room where Stinson and Kelly explained the problems they were having:

"Somehow we have to get a better raw material inventory," began Stinson. "Every time we go out into the cold storage area to count the containers of fruit, we have lost or found $6000 to $7000 worth of inventory. Sometimes we find it in the next inventory. Other times, it's just gone. The same goes for our inventories of jars, labels and lids. We just cannot keep track of them.

---

1. Copyright © 1973 by Paul P. Gutelius. This case was prepared as a basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

"But we have another problem too: our theoretical yields. We use formulas here to produce our jams. They are just like the recipes your wife gets from a cookbook. So much fruit, so much sugar, pectin, corn syrup, etc. These formulas are set by our quality control people and they know what they are doing. But sometimes our yields don't come out. We know that the man who counts the cases as they come off the line sometimes makes mistakes, and we can easily check that, but there are other problems in production that keep our actual and theoretical yields far apart, and we have not been able to put our finger on them.

"What we would like you to do, is to figure out a way to give us an accurate raw material inventory on a daily basis, and also production exception reports whenever the actual yield is above the theoretical by 1% or below it by 3%.

"I would suggest that you start with a tour of the plant."

Kelly took Smith on a tour of the plant. The layout of the cookroom is shown in chart 1. As they walked through the plant, the evening shift was just restarting the packaging line. The foreman had started the conveyor and was working on the device which puts labels on the jars when a jam up occurred and jars began to fall on the floor and break. He left the labeller and dashed to the source of the problem. As he neared the trouble spot at a full run, he slipped on the wet floor and fell. He was not hurt, got up, and fixed the difficulty. Further down the line, however, Kelly and Smith noticed that the box sealer was not operating properly, and soon the foreman was busy working on that piece of equipment also.

In answer to Smith's question on maintenance men, Kelly said, "Our maintenance crew is on call and whenever the foreman needs them, he just calls. He obviously thinks these snares are not serious enough to require a repirman. Boy, you sure did pick a day to tour the plant! We never have this much go wrong all at once."

Back in the quiet of Kelly's office, Smith and Kelly laid out a plan to accomplish the task. Smith would interview all the people who have inputs to or get information from the raw material inventory. This information flow is described on chart 2. Smith decided to start with the production scheduler, Bert Cann.

Bert had come up through the organization. He was a foreman before he moved into the scheduler's job. He still filled in for the foremen whenever one of them was sick or on vacation. He planned the production schedules for a week in advance based on the finished goods inventory and the average monthly usage figures provided by the Cleveland office. He was responsible for having all the raw materials he needed for production on hand and defrosted. Raw materials were stored in warehouses in Oakland and San Jose and a phone call would have what he needed in San Francisco the same day.

Bert had excellent relations with the foremen. They frequently

came to him with production problems. His previous experience enabled him to suggest ways to solve most of the problems the foremen faced. One day while Smith was talking to Cann, the day shift foreman came in, obviously unhappy, and said, "Bert, I've got a problem. The cookroom forgot to add corn syrup to a batch before they sent it up. What can I do?"

Bert sighed. "Well, there's not much you can do. Dump that batch and perhaps we can salvage it for use later by mixing it with other batches of the same product."

After the foreman left, Cann explained to Smith, "After the raw materials are mixed in the vats and preheated, the batch is pumped to the upper level where it is cooked in a vacuum. Once the batch is up in the cooker, there is no way to get it back to the mixing vat. We may be able to reuse that batch, but I don't know. If it has already been cooked, then we are just out of luck. We drum it up and send it to our plant in Oregon, where they extract the sugar. We can reuse the sugar in some of our other products, but the rest is thrown out."

The next week, Smith was again talking to Cann. They were walking through the plant when they noticed some rather sick-looking orange marmalade in one of the cooling pans. "What happened?" Bert asked the foreman.

"The cookroom did not adequately clean the mixing vat before they started making the orange. Those little seeds are from the boysenberry jam we were making before we started the orange."

Cann explained that this batch would have to be drummed and sent to Oregon for the sugar extraction process.

The next time Smith saw Cann was about two weeks after the above incident. Cann had been substituting for the night foreman for a week. He looked tired.

"Wow! Am I ever glad that I'm done foremanning for awhile! I spent the last two hours of last night's shift operating the 'automatic' box sealer. The arm that pushes down the back flap on the cases was not working properly. I tried to fix it three times during the shift. I finally gave up and just stood there and worked it by hand."

Between the two incidents above, Smith had spent a couple hours talking to the inventory clerk, Margaret Mead. She recalculates the raw materials used, based on the formula and the number of batches produced. This is used to check the foreman's multiplication. She then posts the usage in her books and updates the inventory. She complained about the foremen not putting the raw material codes on the formula report. This can cause her problems, since she might have, for instance, 3 or 4 lots of blueberries, each picked at a different time of the year in a different state. Without the code, she would not know which of the lots to charge for that day's production. She also stated that when the cookroom used a special formula, perhaps to incorporate salvaged goods in a normal batch, she did not always get the formula. She then has no means by which to check the figures of the foreman.

Smith was curious about the Formula Report, an example of which is found on chart 3. He asked Margaret if it was useful. "Well," she replied, "We get the corn syrup reading at the beginning and end of each shift and that is put on the Report. But beyond that, the foreman merely fills in the formula he used for all the runs (and I have all the formulas) then multiplies the per batch formula by the number of batches he ran. About the only thing I need on that report is the formula numbers, the corn syrup readings, the citric acid (because that is not listed in most formulas), and the amount of salvage at the end of the run. It would also be nice to have a place right on that report which tells me any special formulas they use."

Smith met the foreman later that day as he was observing the cookroom operation. "How long does it take you to fill the Formula Report out each day?" Smith asked. The foreman replied that he spent anywhere from 15-30 minutes filling it out, depending on the number of different products run that day. He too felt that the Report contained little significant information which was not available elsewhere.

After talking to the foreman, Smith went into the Quality Control lab where he found the head of the section, Chuck Hare. They talked about the Formula Report, and Hare agreed that the copying of the formulas was not providing any unique information. He thought that the Report should be reviewed, revised, or perhaps eliminated.

Hare also told Smith how he arrived at the theoretical yields for the formulas. "It's easy. You just add up the amount of each raw material used, then divide the total by the average weight of a case. That gives a theoretical yield. I personnally do not think it is terribly accurate, but Cleveland always wants to know why I say that a batch is going to produce so many cases of jam. This way I can easily explain it."

"Then you don't think exception reports should be based on 1% above and 3% below theoretical yield?" questionned Smith.

"No. Look at these figures for August. That was a pretty typical month. We had a few problems, but not an abnormal amount. Each day I calculate the percentage of theoretical yield attained for each run. That percentage depends on many things: the number of batches in the run (some of the product gets hung up in the pipes, and that amount is the same whether you make one batch or 50. So, the more you make, the closer you come to the theoretical yield.); the age of the fruit when picked; the sugar content of the fruit. Even the product being made causes differences. Some do not lose much in the piping; others lose alot."

Smith looked at the August figures. He found that the average per run yield had been only 95% of the theoretical yield. Exception reports would have been generated for 48% of the runs for that month. The company kept no records on per batch yields, although those runs with the most batches generally had higher yields than those with only one or two batches. "Can the cookroom come within a few percent of the raw materials they are supposed to use?" asked Smith. "Sure. They could come within one percent if they wanted to."

Smith thought he had better look at the controls presently employed before he made any decisions or recommendations. He went to the cookroom and watched the process for about thirty minutes. They were making strawberry jam. These are the notes he made:

Fruit: poured from 55 gallon drums into a hopper in either whole or half drum amounts. If ½ drums are used, an even number of batches is produced. Drum pouring is by the eye of the operator.

Sugar: A large weighing bin is filled to 760 pounds. The operator subtracts the amount required for the batch from 760, opens a valve at the bottom of the weighing bin and closes it when the difference is reached. He then notes the amount required for the batch on a clipboard. Later, Smith learned that normally the weighing bin is set to the formula amount and emptied for each batch.

Corn Syrup: An amount is set on an automatic meter. When the pump is started, that amount is metered into the mixing vat. The cumulative meter is recorded at the beginning and the end of each shift. The operator notes the amount required in each batch on a clipboard.

Pectin: The amount required is scooped onto a scale set by adjusting weights. This scale is extremely accurate within one ounce of the set weight. The amount weighed is recorded on a clipboard.

Mixing Vat: Each of the five vats has a list of ingredients commonly used, posted on the side of the vat. As each ingredient is added, the vat man is to check it off the list. These lists are illegible. The paint is worn off and no one was using them.

Smith recalled a conversation with Cann about the corn syrup meter. Cann had said that since the readings were only taken at the beginning and end of each shift, mistakes could be covered up. For instance, if too much corn syrup was inadvertently put into one batch, the crew could compensate for the error by figuring out how much corn syrup they would need, for that production run to appear to be correct, i.e. what the meter should read at the end of the shift. Then they divide that, by the number of batches left to produce, and use the dividend as the setting on the corn syrup meter.

QUESTIONS:

1. What principles of management are illustrated here?
2. If you were Smith, what would you recommend to Stinson and Kelly as a means to obtain a better raw material inventory and to provide exception reports?
3. If you were Smith, would you recommend any change to the Formula Report? to any facet of the production operation?

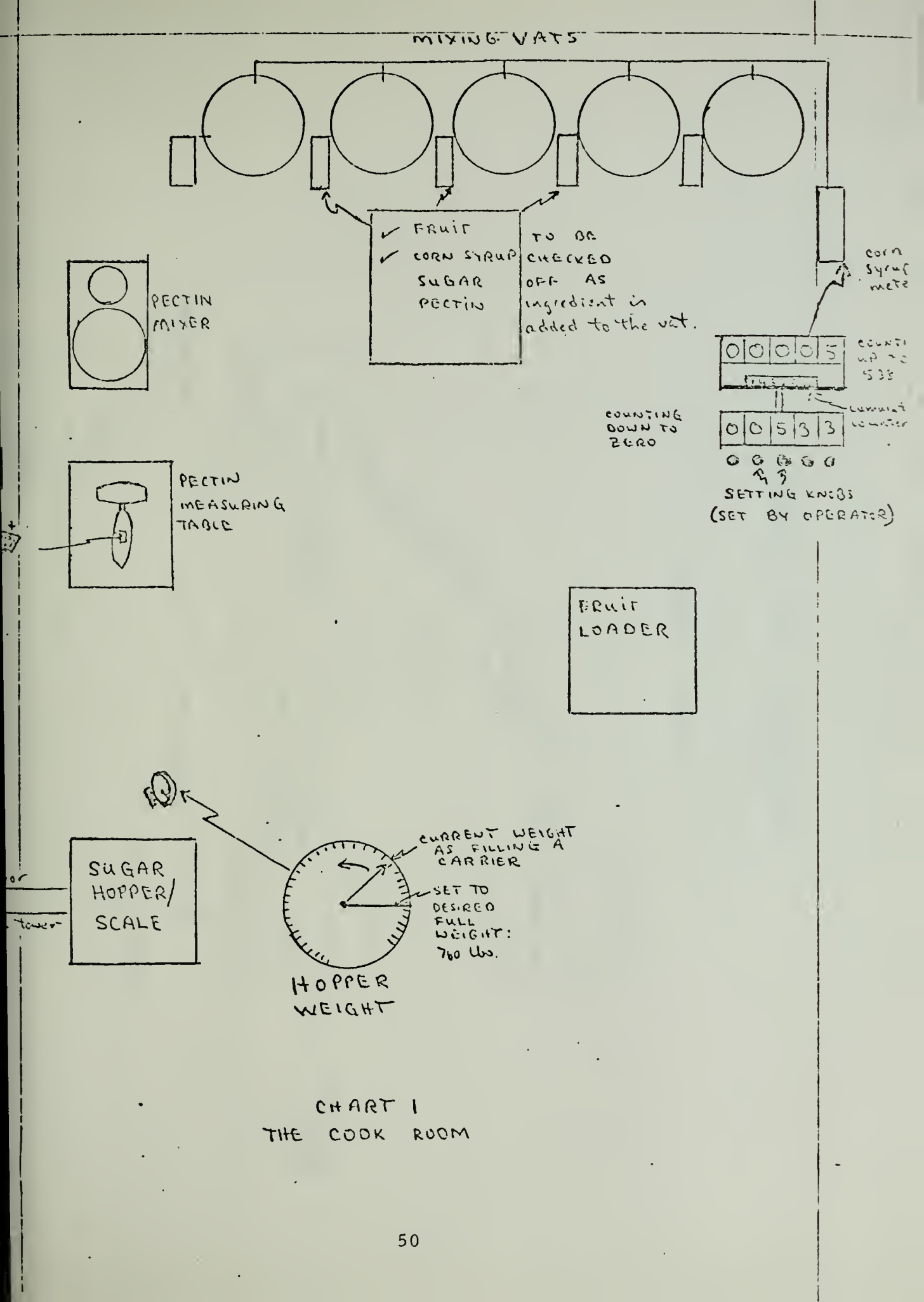

CHART I
THE COOK ROOM

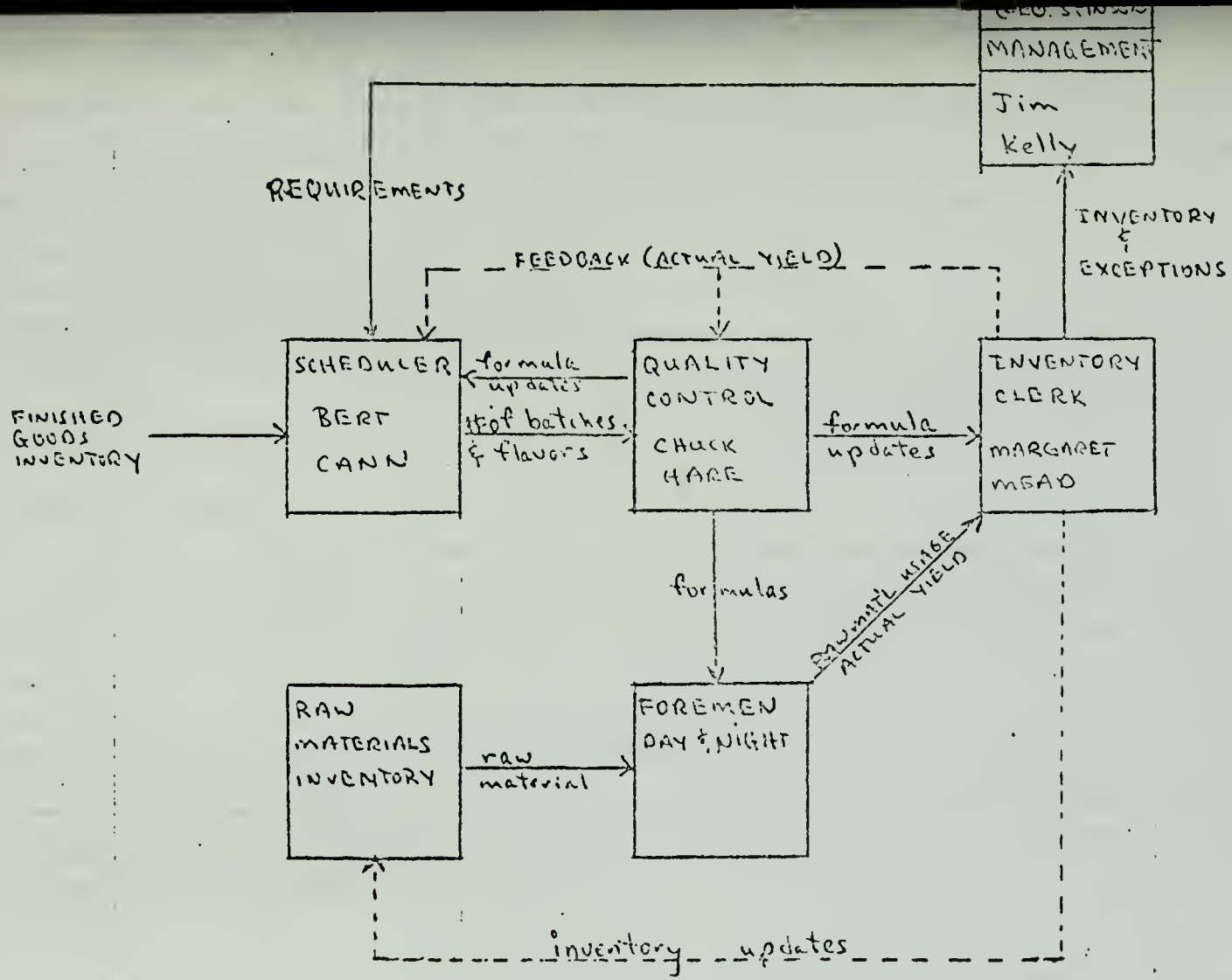

CHART 2
INFORMATION FLOW DIAGRAM

: OP6145321
: ART6123371

FLAVOR	No. BATCHES	SUGAR lbs	CORN SYRUP lbs	SIGMA PECTIN lbs	RAPID SET PECTIN lbs	CITRIC ACID oz	SODIUM CITRATE oz	STRAWBERRY 963 dr	APRICOT 952 dr	GRAPE 930 dr	Plum 962 dr	SALVIA G
STRAWBERRY	50	21000	15000	75	25	600	75	100				
APRICOT	7	2100	2450	9.8	4.2	42	10.5		14			
GRAPE	10	5000	2000	20	10	100	30			20		
SATSUMA Plum	10	4000	2500	30	20	50	40				20	
STRAWBERRY	1	420	300	1.5	.5	12.	1.5	2				
APRICOT	1	300	350	1.4	.6	6	1.5		2			
GRAPE	1	500	200	2	1	10	3			2		
SATSUMA Plum	1	400	250	3	2	5	4				2	

* THE FORMULAS ON THIS SAMPLE ARE NOT THE ACTUAL FORMULAS USED.

APPENDIX D

OPTION SELECTION FORM

Circle the option you have selected to follow for the rest of the course:

1. Reading List

2a. Cases.

2b. Cases with outside business.

3. Computer Game.

4. Other (must be approved).

Why did you choose that option?

APPENDIX E

READING LISTS

Reading list -- the Classics — Weeks 4 and 5

READ ONE OF THE FOLLOWING BOOKS:

Barnard, Chester, The Functions of the Executive, Harvard Univ. Press, Cambridge, 1938. HD31.B18

Fayol, Henri, General and Industrial Management, Dunod, Paris, 1925. HD31.F2

Metcalf, Henry and Lyndall Urwick, Dynamic Administration: the Collected Papers of Mary Parker Follett, Harper Bros., New York, 1942. HD31.F6

Roethlisberger, Fritz and William Dickson, Management and the Worker, Harvard U. Press, Cambridge, 1939. T58.R6

Taylor, Frederick, The Principles of Scientific Management, Harper and Bros, New York, 1911. T58.T2

Your paper will evaluate the book you read based on the readings on Theory from the first three weeks and on the following articles:

Maslow, A. H., "A Theory of Human Motivation", Psychological Review, Vol. 50, 1943. pp. 370-396. On reserve at Library.

Urwick, Lyndall F., "Are the Classics Really Out of Date?", S.A.M. Advanced Management Journal (July, 1969), pp. 4-12. Copies on reserve in the Library.

The paper should indicate which book you selected, a brief summary of the major points of the book, and whether you think it is applicable today. The last part of the paper should include comments on what other authors you have thus far read think of the book or what you think they would think of it.

The paper is due Thursday, 25 October 1973.

Reading List - The Behavioralists

I. Introduction from J. H. Donnelly, J. L. Gibson, and J. M. Ivanovich. Fundamentals of Management: Selected Readings. Dallas: Business Publications, Inc., 1971. pp. 101-102.

II. Books

A. Choose and read one of the following books:

1. Herzberg, Frederick, B. Mausner, and B. Synderman, The Motivation to Work, New York: John Wiley and Sons, 1959.

2. Herzberg, Frederick, Work and the Nature of Man, Cleveland: World Publishing Co., 1966.

3. Homans, George G., The Human Group, New York: Harcourt, Brace & World, Inc., 1950.

4. Katz, Daniel, and Robert Kahn, Social Psychology of Organizations, N. Y.: John Wiley & Sons, 1966.

5. Likert, Rensis, New Patterns of Management, N. Y.: McGraw-Hill, 1961.

6. _____, The Human Organization, N. Y.: McGraw-Hill, 1967.

7. March, James and Herbert Simon, Organizations, N. Y.: John Wiley & Sons, 1958.

8. Maslow, Abraham H., Eupsychian Management, Homewood, Ill.: Richard D. Irwin, Inc., 1965.

9. _____, Motivation and Personality, N. Y.: Harper & Row, 1954.

B. Your paper for this period should indicate the book selected, include a brief summary of the major points in the book, and specify whether you think this book has added anything to the management principles as you presently understand them. If the book has added something, tell what it is. If not, tell where you think the author went astray. Specify which principles (e.g., planning, organizing, staffing, controlling, directing) are affected by the author's comments. Tie the following articles in only where they are appropriate. If you do not like them, please indicate your reasons.

This paper may be up to 8 pages long due to the amount of reading involved.

III. Articles

A. Mandatory: read all of these. They are on reserve in the library.

1. Albrook, Robert, "Participative Management: Time for a Second Look," Fortune, May 1967, pp. 166-170, 197-200.

2. Herzberg, Frederick, "One More Time: How do you Motivate Employees," Harvard Business Review (HBR), Jan-Feb 1968, pp. 53-62.

3. House, Robert and L. A. Wigdor, "Herzberg's Dual Factor Theory of Job Satisfaction and Motivation: A Review of the Evidence and a Criticism," Personnel Psychology, Vol 20, 1967, pp. 369-389.

4. Lawrence, Paul R., "How to Deal with Resistance to Change," HBR, Jan-Feb 1969, pp. 4-12.

5. Levinson, Harry, "Management by Whose Objectives," HBR, July-Aug 1970, pp. 125-134.

6. Myers, M. Scott, "Conditions for Manager Motivation," HBR, Jan-Feb 1966, pp. 58-71.

7. Tannenbaum, Robert and Warren Schmidt, "How to Choose a Leadership Pattern," HBR, Mar-Apr 1958, pp. 95-101.

B. Optional Articles. These articles may be of interest to some of those who are reading certain of the books on the list. As you want, or have time, these are available:

1. Anderson, John, "Giving and Receiving Feedback," Internal Company Document from Proctor and Gamble Co.

2. Calame, Byron E., "The Truth Hurts ..." Wall Street Journal, 14 July 1969.

3. Kolb, David, Irwin Rubin and James MacIntyre, "Helping and Consulting," from Organizational Psychology: An Experimental Approach. Englewood Cliffs, N. J.: Prentice-Hall, 1971.

4. Meyer, Albert H., E. Kay, and J. R. P. French, Jr., "Split Roles in Performance Appraisal," HBR, Jan-Feb 1965, pp. 123-129.

5. Neilsen, Eric H., "Understanding and Managing Intergroup Conflict," from Harvard Business School 1971.

6. Rogers, Carl R., "A Tentative Formulation of a General Law of Interpersonal Relations," On Becoming a Person, Boston: Houghton-Mifflin Co., 1961.

7. _____ "The Characteristics of a Helping Relationship," Personnel and Guidance Journal, Sep 1958, pp. 6-16.

8. Scott, William, "Organization Theory: An Overview and Appraisal," AMJ, Vol 4, No. 1 (April 1961), pp. 7-26.

9. Thompson, Paul H. and G. W. Dalton, "Performance Appraisal: Managers Beware," HBR, Jan-Feb 1970, pp. 95-101.

Reading List - The Scientists and a Lighter Side Weeks 8-9

I. Since you have a course in OR next quarter, we will spend little time covering that part of management. Select one of the textbooks listed on a cross-reference table, and read the chapters dealing with the "Management Science School of Management." You might also be interested to see how the material you have been reading fits into the scheme of a regular textbook. One table is found in Fundamentals of Management: Selected Readings by Donnelly, Gibson and Ivancevich, Dallas: Business Publications, Inc., 1971, pp. ix-x.

II. The selections in this section provide a different view of management than students normally see.

Curts, Maurice E., VADM, USN, Address to NPS, 16 May 1958. Call number: AC901 .P2, Vol. 4, number 16 (about 6 pages).

Drucker, Peter F., "Managing for Business Effectiveness," HBR, May-June 1963. pp. 53-60.

*Jay, Anthony, Management and Machiavelli: An Inquiry into the Politics of Corporate Life, N.Y.: Holt, Rinehart, & Winston, 1967.

Koontz, Harold, Toward a Unified Theory of Management, N.Y.: McGraw-Hill, 1964. pp. 242-251.

Lawless, David J., Effective Management: Social-Psychological Approach, Englewood Cliffs, N.J.: Prentice-Hall, 1972. pp. 44-46.

Morse, John and Lorsch, Jay, "Beyond Theory Y," HBR, May-June 1970, pp. 61-68.

Parkinson, C. Northcote, Parkinson's Law and Other Studies in Administration, Boston: Houghton Mifflin Co., 1957, pp. 2-13.

*Peter, Laurence J. and Hull, Raymond, The Peter Principle, N.Y.: William Morrow and Co., 1969.

*Peter, Laurence J., The Peter Prescription: How to be Creative, Confident, and Competent, N.Y.: William Morrow and Co., 1972.

*Choose one of these three books. You may read them all but you must read at least one.

III. This paper is due by 1200, 21 November. It should answer the following questions:

1. Does management science have a valid claim to existence? Support your contention.

2. How would Classicists and Behaviorists have viewed the book you selected?

3. Does the book you read modify the principles of management? Which and how? What about the articles?

NOTES FOR OPTION 1 11 November 1973

The first two sets of papers showed that you can all follow directions pretty well. Little original thought went into those papers. It was mostly a semi-digested regurgitation of the authors' words. That is fine for high school, and perhaps it is all right for the first two sets of papers in this course.

The time has come, however, for you to provide me with some original thought. You are reading some relaxed views of management this period. Those authors generally demonstrate some originality and that makes for interesting reading.

By the time you finish this reading, you will have a reasonable notion of what books say management is all about. What I want in this third paper is your views on management, management education, this course, or any combination of the above. I've read Peter and Jay, so I would prefer that you tell me what you think. You can back up what you say with quotes, if you like, but I am really interested in knowing if you learned anything, what you learned, how you learned it, and if it was worth learning. There is no length restriction on this paper but please try to be as concise as possible.

APPENDIX F

The following is a list of the cases used for the course and the sources of the cases:

1. "Major Motors"
2. "Ames Chemical Company"
3. "Morgan Steel"
4. "The Acme Manufacturing Company"
5. "Wynn Shoe Manufacturing Company"

The above five cases are from Raymond J. Ziegler, Principles of Industrial Management Case Book. (New York: The MacMillan Co., 1961)

6. "William McDonald," from Harbridge House, Inc., 1971
7. "The Slade Company" from Harvard Business School, 1960.
8. "Delta Airlines," a case on videotape by Morton Cotlar of the University of Hawaii.
9. "Marketing Systems, Inc.," from Harvard Business School, 1971.
10. "The Dynamics Company" from Harvard Business School, 1971.
11. "The Position Description Case" from Harbridge House, Inc., 1957.

APPENDIX G

QUESTIONNAIRE

Please be honest about your feelings toward this course. Your appraisal is necessary for me to evaluate the degree of success or failure which has been achieved and to improve the course for future students. Any comments you wish to make would be welcomed, signed or unsigned.

Please circle the number which most closely indicates your feeling toward the question:

Agree Completely — No Opinion — Disagree Completely

1 2 3 4 5 6 7

My option:

Readings Cases Live Cases Game Other

1. The course has taught me the principles of management. 1 2 3 4 5 6 7

2. The course has taught me how to apply the principles of management. 1 2 3 4 5 6 7

3. I would prefer a more structured course (lectures based on reading assignments.) 1 2 3 4 5 6 7

4. The reading assignments on theory were too lengthy. 1 2 3 4 5 6 7

5. The time allowed for the theory readings should have been _____ weeks.

6. The balance between theory and practice was good. 1 2 3 4 5 6 7

7. The midterm was too long. 1 2 3 4 5 6 7

8. The midterm was graded fairly. 1 2 3 4 5 6 7

9. I learned the management principles in the first three weeks. 1 2 3 4 5 6 7

10. I learned the management principles in the practice phase. 1 2 3 4 5 6 7

11. If your friend was going to take this course next quarter, what option would you recommend?

readings case live case game other _____

12. I cannot use anything I learned in this course.
1 2 3 4 5 6 7

13. This course is the best course I have had:
at NPGS. 1 2 3 4 5 6 7
ever. 1 2 3 4 5 6 7

14. This method of teaching should be used more often in graduate school. 1 2 3 4 5 6 7

15. Would you recommend this course to a friend who was not required to take it? Yes No
Why? (optional)

16. I would be willing (given the time) to take this course again:
in the same option. 1 2 3 4 5 6 7
in a different option 1 2 3 4 5 6 7

17. Things I liked about the course:

a. organization (theory, then practice) 1 2 3 4 5 6 7
b. availability of options 1 2 3 4 5 6 7
c. the unstructured nature of course 1 2 3 4 5 6 7
d. my option 1 2 3 4 5 6 7
e. the midterm 1 2 3 4 5 6 7
f. the seminar with Mr. Warner 1 2 3 4 5 6 7
g. M8 vehicle 1 2 3 4 5 6 7
h. Other _____

_____

_____

(Use the reverse side if more space is needed)

ANSWER ONLY THE QUESTIONS ON YOUR OPTION.

18. The readings assigned were appropriate and valuable:
to me. 1 2 3 4 5 6 7
to my career. 1 2 3 4 5 6 7

19. The reading assignments were too long to complete in the time assigned. 1 2 3 4 5 6 7

20. The grading of the papers was too concerned with grammar. 1 2 3 4 5 6 7

21. The paper topics were unclear. 1 2 3 4 5 6 7

22. The cases assigned were appropriate and valuable:
    to me 1 2 3 4 5 6 7
    to my career 1 2 3 4 5 6 7

23. Too few cases were covered. 1 2 3 4 5 6 7

24. The cases left me empty. 1 2 3 4 5 6 7

25. The computer game was appropriate and valuable:
    to me. 1 2 3 4 5 6 7
    to my career. 1 2 3 4 5 6 7

26. The computer game:
    a. showed the principles in action. 1 2 3 4 5 6 7
    b. helped me understand how to use the principles 1 2 3 4 5 6 7
    c. was a waste 1 2 3 4 5 6 7
    d. was useful as a teacher. 1 2 3 4 5 6 7

27. The M8 armored car exercise was a waste of money, time, and effort. 1 2 3 4 5 6 7

Your comments (optional):

SUMMARY OF QUESTIONNAIRE RESULTS

Question	Total Responses	Grading Scale (number of responses) 1	2	3	4	5	6	7
Option	21	3	4	3	9	2 did not specify		
1	21	7	11	2		1		
2	21	7	9	5				
3	20					2	8	10
4	21		2	3	1	4	6	5
5	18							
6	21	5	11	3		1	1	
7	21				8	2	4	7
8	21	7	6	2	4	2		
9	18	2	3	9	1	2	1	
10	21	1	11	5	1	2	1	
11(option)	21		2	4	9	5	combine all three: 2	
12	21					1	2	18
13a	21	3	6	6	1	4	1	
13b	20	2	3	4	2	5	4	
14	21	8	10	2	1			
15	21	yes: 21	no: 0		comments: 14			
16a	19	5	6	3		5		
16b	18	4	5	4	1		1	3
17a	21	8	6	7				
17b	21	12	6	3				
17c	21	9	7	4	1			
17d	21	10	8	2		1		
17e	21		5	9	2	2	3	
17f	21	6	6	7	1	1		
18a	9	4	5					
dings 18b	10	4	4	2				
19	8	1	1	2			2	2
20	4				3	1		
21	5				1		4	
22a	10	2	7	1				
cases 22b	10	1	8	1				
23	10			2	1	2	4	1
24	10					2	5	3
25a	9	6	2			1		
25b	9	2	4	2		1		
game 26a	9	3	3	2		1		
26b	9	2	2	4		1		
26c	9			1			2	6
26d	8	3	4	1				
27	7						6	1
general comments:	12							

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This thesis describes the design, implementation, and evaluation of a course in the theory and practice of management. It gives an appraisal of programmed learning techniques and compares three methods of teaching management -- by readings, by cases, and by computer gaming. Additionally, it relates student reactions to the opportunity to select one of the three methods.

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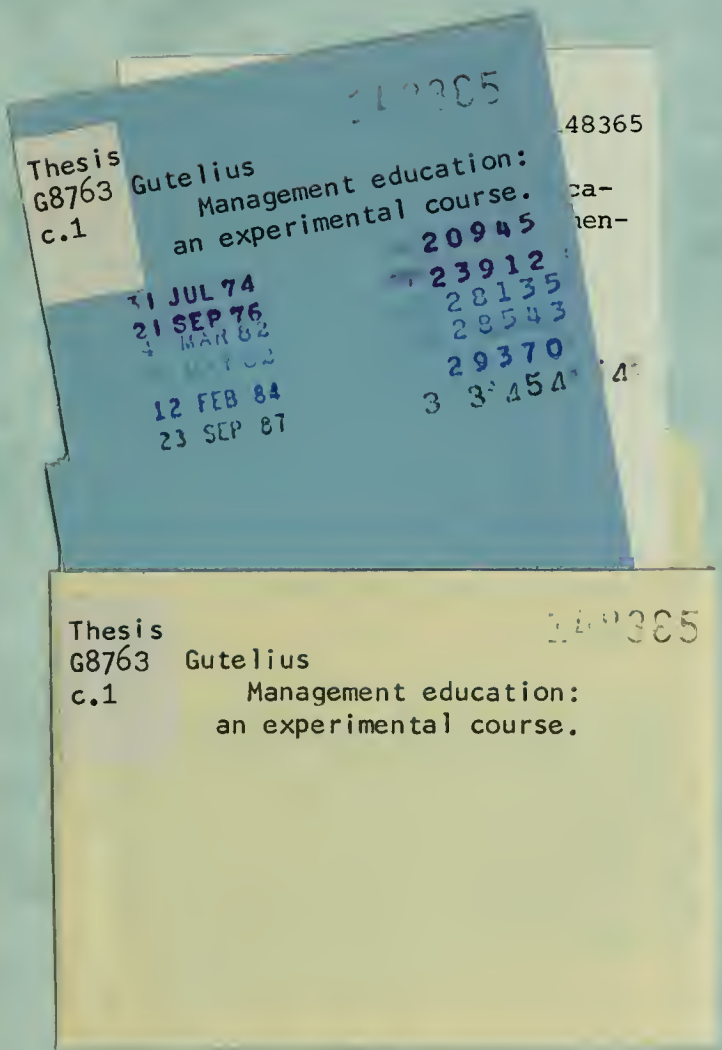
The conclusions emphasize the need for an integrated, dynamic approach to management education. Programmed learning must be supplemented by class lectures and discussions when the theory is being taught. The students need exposure to all three options in the practice phase of the course. Most importantly, the value of a choice between options is seen. The motivation and interest generated thereby surpasses all expectations. An improved course outline which includes all of the conclusions is also presented.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